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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/982,406	10/17/2001	John M. White	6199/DISPLAY/AKT/BG	6829
32588	7590	07/20/2004	EXAMINER	
APPLIED MATERIALS, INC. 2881 SCOTT BLVD. M/S 2061 SANTA CLARA, CA 95050			KEENAN, JAMES W	
			ART UNIT	PAPER NUMBER
			3652	

DATE MAILED: 07/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/982,406

**Applicant(s)**

WHITE ET AL.

**Examiner**

James Keenan

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 21 April 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-22 and 47-59 is/are pending in the application.
- 4a) Of the above claim(s) 5-7, 12, 16, 22 and 53-59 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 8-11, 13-15, 17-21 and 47-52 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

1. Claims 5-7, 12, 16, 22, and 53-58 remain withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed in paper #8. New claim 59 is withdrawn for the same reason. Note that claim 55, previously treated on the merits, should have been indicated as withdrawn, in that it depends from non-elected claim 53.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 8-11, 13, 15, 17-19, 47, and 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okayama (JP 2-121347, previously cited) in view of Young (US 6,677,594), or alternatively, over Young in view of Okayama.

As noted previously, Okayama shows the invention essentially as claimed except it apparently is not used in a chamber, as recited in claim 8.

Young shows a similar substrate support for use in a chamber, the support comprising a plurality of low friction spherical projections 16. The projections, however, are not balls.

It would have been obvious for one of ordinary skill in the art at the time of the invention to have modified the apparatus of Okayama by utilizing the support in a chamber, as suggested by Young, as this would simply be the use of a well known type of support in a processing chamber.

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Alternatively, it would have been obvious for one of ordinary skill in the art at the time of the invention to have modified Young by replacing the spring loaded projections with balls, as shown by Okayama, as this would simply be an art recognized alternate equivalent means of supporting substrates with a low friction surface.

Re claim 11, although Okayama shows a curved seat, it does not contact the ball at only a single point. Nevertheless, the utilization of such a single contact point is considered an obvious design expediency which would neither require undue experimentation nor produce unexpected results.

Re claims 17-19, note in figure 4 of Young that projection 10A is disposed on the center line of the substrate, and thus supports a "center portion" thereof, as broadly claimed.

4. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Okayama in view of Young, or vice-versa, as applied to claim 8 above, and further in view of Hansson et al (US 4,621,936, previously cited).

The Okayama/Young apparatus does not disclose the surface roughness of the balls to be 4 micro-inches or smoother. As noted above, however, Young does teach the projections to be very low friction.

Hansson teaches the roughness of rolling balls to be in a range which includes 4 micro-inches.

It would have been obvious for one of ordinary skill in the art at the time of the invention to have further modified the apparatus of Okayama/Young such that the

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roughness of the balls was 4 micro-inches or smoother, as shown by Hansson, as this would simply be the use of a specific and well known low friction surface roughness. It is noted that Hansson is not to be considered as specifically teaching the obviousness of using a surface roughness of 4 micro-inches in a substrate support, but merely that using balls with such a low friction surface roughness in general is well known. Young, as noted above, provides the teaching of a very low friction surface for use in supporting substrates.

5. Claims 1, 3, 4, 20, 21, 49, and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okayama in view of Young, or vice-versa, as applied to claims 8 et al above, and further in view of De Masi, Jr. et al (US 4,801,144, previously cited).

The modified apparatus of Okayama/Young does not show the balls to be coated or plated. Note, however, that Young discloses the projections to be made of a low friction plastic material which is resistant to wear but will not damage the wafers. These are the same advantages set forth by applicant.

De Masi teaches a low-friction coating to be used on a plastic ball.

It would have been obvious for one of ordinary skill in the art at the time of the invention to have further modified the apparatus of Okayama/Young such that the balls were coated with a low friction material, as suggested by De Masi, as this would be cheaper than making the entire support from the low friction material. Note that De Masi is not to be considered as specifically teaching the obviousness of using coated balls in a substrate support, but merely that coating balls with a low friction material in general is

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well known. Young, as noted above, provides the teaching of a low friction, non-damaging surface for use in supporting substrates.

Re claim 3, the specific type of coating is considered a obvious design choice, as it has been held that selecting a known material on the basis of its suitability for the intended use is within the general skill of a worker in the art.

6. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Okayama/Young in view of De Masi, as applied to claim 1 above, and further in view of Hansson et al.

This rejection utilizes the same obviousness rationale as set forth in paragraph 4.

7. Claims 48 and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okayama in view of Young, or vice-versa, as applied to claims 8 and 47 above, and further in view of Masciarelli (US 4,706,793, previously cited).

The modified apparatus of Okayama/Young does not show the balls to be polished.

Masciarelli shows polished support balls 27.

It would have been obvious for one of ordinary skill in the art at the time of the invention to have further modified the apparatus of Okayama/Young such that the support balls were polished, as shown by Masciarelli, as this would further improve the low-friction, wear-resistant, and non-damaging characteristics of the balls. In the same manner as noted above, the tertiary reference is to be construed as a general teaching.

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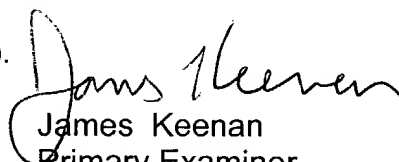
8. Applicant's arguments with respect to the pending claims have been considered but are moot in view of the new ground(s) of rejection.

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to James Keenan whose telephone number is 703-308-2559. The examiner can normally be reached on Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eileen Lillis can be reached on 703-308-3248. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
James Keenan  
Primary Examiner  
Art Unit 3652

jwk  
7/13/04